VOSERESENSKIY, A.I.; MORACHEVSKIY, V.G.; NIKANDROV, V.Ia.

Jse of dry ice for cloud dispersal in the Arctic. Probl. Arkt.
no.2:133-139 '57.
(Dry ice) (Arctic regions—Weather control)

(Dry ice) (Arctic regions—Weather control)

| - | Vo | 5 K | <u>/ F</u> | SÉ | N.S                                    | SK | 1)                   | <i></i> | A                                                  | <u>[ .                                   </u> |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                |                                                                     | · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                   |     |   |   |  |
|---|----|-----|------------|----|----------------------------------------|----|----------------------|---------|----------------------------------------------------|-----------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----|---|---|--|
|   | •  |     |            |    |                                        |    | •                    |         | an the Brady                                       | Dentson A.B.                                  |             | COVERIOR: This dealing with the character of estuaries of distribution and thrir efficients of the covering and thrire. By                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Section in Section 2                                                                                           | Bern. Ed.: V.V.<br>(Dayety Besty.<br>V.V. Levrov., I<br>Drothiline. | Problemy Artificial Society States of the Principles of the Princi | iningral, Arts                                                    |     |   |   |  |
|   |    |     |            |    | *                                      |    |                      | -       | Inderdopertmental and Villisation of               | Elici-Latinta Oc                              |             | This collection of 19 certains is the around of a series of the groties of the Arctic sed Antarctic. The certains of what the Dannit San, byduchical consists of Shorian rivers, types of ameriparis circulation in the series Arctic, metro of the byduchicalic arcticon in the Sayles Arctic, metro of the byduchicalic arcticon in the Sayles Arctic, metro of the byduchicalic arcticon. A collect is byduchicalic arcticalics. A collect is byduchicalic arc sections.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | it The publication is intended for geographers, occasional these interested in the studies of Arctic and Anta. | Prolon: Elitor<br>Ed.), I.M. Dal<br>L.V. Nakaimor,                  | leging of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PAKE I BOX EXPLORATION<br>Articheddy i A terticheddy mewhar-ielei |     |   | · |  |
| • | ·  | •   |            |    | •                                      | •  |                      |         | Contributing Conference forward for and Show Cower | emographic Expedition inte                    | DIPOSOUTION | erticles is the retire and Antaret as the Dayorts Ser Stroephs in the micrations in the micrations. Include the stroetic as a st | aded for geograph<br>e stadies of Aret                                                                         | otta, Ministeretto<br>fein, L.G. Keplinske<br>A.I. Ol', I.L. Bene   | ាំង                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NACE I BOX ECHLOTZETON                                            | • . |   |   |  |
|   |    |     |            |    |                                        |    | •                    |         | Terende<br>Terende                                 | Expedition<br>Lipedition into                 |             | ic. The articles<br>it, The articles<br>it, bytrological ou<br>its sirelation i<br>e Soviet Arrtic, I<br>maded in brind into<br>lefarences accom-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | arm, oceanographers<br>the and Antagottic re                                                                   | ym, A.A. Eleillor<br>ym, A.A. Eleillor<br>ymk, and B.Y. Jul         | , .<br>, .<br>, .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                   |     | • |   |  |
|   |    |     | •          | •  |                                        |    |                      |         | <b>K</b>                                           | ,<br>J                                        |             | e of publications of deal mainly with mainly with the mainly was the Arctic, magnetic storms to deal of the specy most of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | re, and particularly regions.                                                                                  | re, P.A. Gordiyenko<br>r, Te.S. Korotkeric<br>timori Tech: L.P.     | Collection of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | sor/act directors                                                 |     | • |   |  |
|   |    |     |            | •  | ************************************** |    | La calcurata — front |         | E                                                  |                                               |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ar)4                                                                                                           | · j.                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                   |     |   |   |  |

S/169/60/000/011/011/016 A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1960, No. 11, p. 127, # 14179

AUTHOR: Voskresenskiy, A.I.

Organization and Methods of Studying the Fogs and Clouds

TITLE: Organization and in-ta, 1959, Vol. 228, pp. 5-13
PERIODICAL: Tr. Arkt. i antarkt. n.-i. in-ta, 1959, Vol. 228, pp. 5-13

PERIODICAL: Tr. Arkt. I and the presented which explain the causes of the TEXT:

Some considerations are presented which explain the causes of the frequent recurrence of fogs in the Arctic zone during the entire year and in the summer season especially. The frequent occurrence of fogs is furthered considerably by the floating floes in the sea and the contrast in temperature at the ably by the floating floes in the sea and the contrast in the summer season. The fogs hamper border between the sea and the continent in the summer season. The fogs hamper the ship motion on the route of the Northern sea passage as well as the performance of the tactical airsurvey of ices, which cares for the route. The radar does not assure the safe ship motion in fogs, and therefore, it is necessary to investigate the possibilities of forecasting and dispersing the fogs by studying their tigate the possibilities of forecasting and dispersing the fogs by studying their physical properties and processes of their development. A brief information is given on the fog investigation methods applied earlier in the Arctic zone, and the

Card 1/2

S/169/60/000/011/011/016 A005/A001

Organization and Methods of Studying the Fogs and Clouds

main problems of the expedition of the Arctic Institute for studying the fogs are listed. The method is described of ground observations, and devices and other means are listed which assure the performance of the aerological, microphysical, and gradient observations. The locality (Tadibe-Yakha, Dikson island) is characterized where the measurements were carried out. The method is described of the flights in fog and at lower cloudiness, as well as the method of measuring the air temperature, humidity, aircraft speed, the sampling, and the microphotography of the cloud elements, the liquid-water centent, the observations of the phase state of the cloud elements by means of the phase recorder of the \$\infty\$(GGO)-system, and the observations of the aircraft icing according to a special pattern. Thirty-six flights covering 55,000 km were performed under complicated conditions in the region of the Gydanskiy and Yamal'skiy peninsulae and as special flights to the Chelyuskin Cape, Khatanga, and Ust'-Tareya. In conclusion, a general characteristic of the weather in the region of the expedition work is presented.

Translator's note; ... This is the full translation of the original Russian abstract.

Card 2/2

VOSKRESENSKIY, A.I.; CHUKANIN, K.I.

Mateorological conditions promoting icing in St. a.

Meteorological conditions promoting icing in St and Sc clouds. Trudy AANII 228:124-134 159. (MIRA 13:2) (Arctic regions--Airplanes--Ice prevention)

6,1130 (also 1093)

S/169/60/000/011/014/016 A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1960, No. 11, p. 172, # 14500

AUTHORS: Voskresenskiy, A.I., Morachevskiy, V.G.

TITIE: The Equipment for the Treatment of Supercooled Clouds and Fogs From

an Aircraft

PERIODICAL: Tr. Arkt. i antarkt. n.-i. in-ta, 1959, Vol. 228, pp. 155-161

TEXT: An aircraft fume-generator and the unit producing dry CO<sub>2</sub>-granules immediately from balloons, installed in the aircraft are described. In an introduction, the present generators for sublimating AgI and the units for granulating dry CO<sub>2</sub> are reviewed. Their disadvantages and the requirements are considered which must be met by the modern units. The AgI-fume generator developed by the authors in 1956 is described in detail. The fundamental schematic diagram and the technical data of the generator are presented as well as the thermal balance of the device and the absolute values of the heat consumption in kcal/hour. The operational principle is described of the unit for producing granules of dry CO<sub>2</sub> directly from liquid CO<sub>2</sub> by throttling the latter through a delivery throttling

Card 1/2

S/169/60/000/011/014/016 A005/A001

The Equipment for the Treatment of Supercooled Clouds and Fogs From an Aircraft

ring with continuous pressure drop in the diffusor, which leads to the formation of a solid-particle stream out of the aircraft; the particles are sphere-shaped mainly with a radius of 0.4-0.6 cm. The size distribution curve is added of the  $\rm CO_2$ -granules obtained from the airborne unit, and the unit operation duration is stated depending on the output and the quantity of the balloons with liquid  $\rm CO_2$  engaged simultaneously. The authors assume that it is expedient to install the developed aircraft fume-generator and the airborne unit for producing dry  $\rm CO_2$ -granules in the aircraft of ice survey for the purpose of dispersing the lower clouds and fogs in the Arctic region.

V.A. Sorochan

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

VOSKRESENSKIY, A.I.; LEDOKHOVICH, A.A.

The LO-4 thermohygrometer. Trudy AANII 228:168-174
'59. (Hygrometry)

(Hygrometry)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

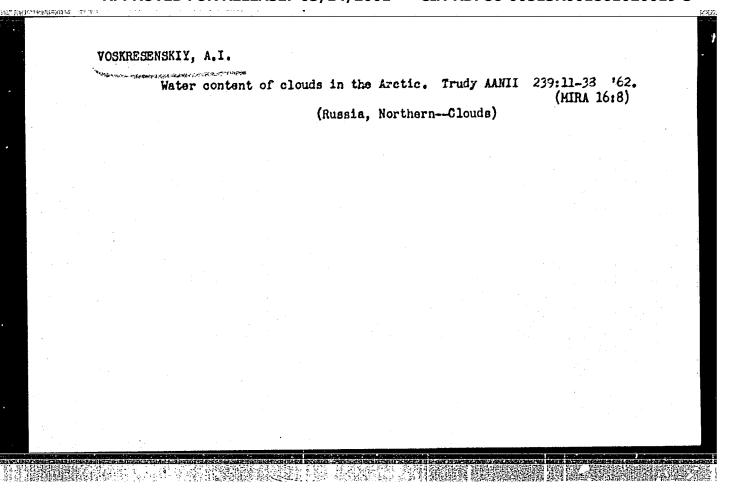
|   | <br>SENSKIY, A.I |           |           |        |         |           |              |   |
|---|------------------|-----------|-----------|--------|---------|-----------|--------------|---|
|   | Weather re       | search ex | pedition. | Probl. | Arkt. i | Antarkt.  | no.8:100-101 |   |
|   |                  |           |           |        |         | research) |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
| • |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              | * |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  |           |           |        |         |           |              |   |
|   |                  | •         |           |        |         |           |              |   |

VOSKRESENSKIY, A.I.; KARIMOVA, G.U.

Frequency and amount of the lower, middle and upper cloud layers in the Arctic during the International Geophysical Year and the year of the International Geophysical Cooperation. Trudy AANII 266:66-89 \*64 (MIRA 18:1)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

在12.11是10年2月1日 | 12.11日 | 12.



Radiation properties of clouds. Trudy AANII 239:39-47 '62.

(Arctic regions—Clouds)

(Arctic regions—Solar radiation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

#### VOSKRESENSKIY, A.I.

Condensation nuclei and concentration of cloud drops in the clouds of the Arctic. Trudy AANII 239:64-74 '62. (MIRA 16:8) (Russia, Northern--Clouds) (Russia, Northern--Atmospheric nucleation)

BUROVA, L.P.; VOSKRESENSKIY, A.I.

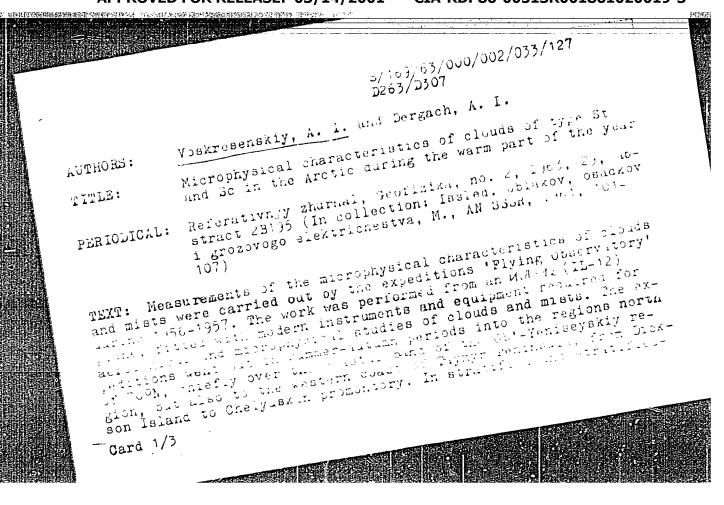
Meteorological conditions governing icing in the As and Ac types of clouds. Trudy AANII 239:95-103 '62. (MIRA 16:8) (Arctic regions—Airplanes—Ice prevention)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

### VOSKRESENSKIY, A.I.

The Moscow - Mirnyy - Moscow flight. Inform. biul. Sov. antark. eksp. no.38:40-41 '63. (MIRA 16:7) (Aeronautics--Flights)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"



s/169/63/000/002/033/127 Microphysical characteristics of ... D263/D307cumulus clouds the expeditions carried out a few hundred vertical soundings, as a result of which a few thousand samples of aloud Wienerson in Foliar Consense were obtained. Majority of observasupports his end of the control of the authorized seed of the 15,000,100,000 Viberations which of utilize it is head the for all for a good for the timely a partograms. cloud droplets was carried out by means of a microphotoequipment, noneretion of a erological mioroscopic and a Lenith-Coambro. Sam-, where the first of the second contract of majority of grove fair into the ration range of a - . . M. . . . . . . . . occurrence of layer incos is extremely rare. Drop sizes vary most strongly in the bentral and appear parts of the closs layers. The fundamental difference between the distribution surves in at and So is that in other files or eas the risk spectrum is not the normalism in the central part of the cloud, whilst in stratified-cumulus olouis maximum honuniformit, is found in the upper part. This sife ference may be explained by the different positions of these parts Card 2/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

Microphysical pharacteristics of ... 5/169/63/000/002/07/27

of the clouds in relation to the beginning of inversion. Calculations of drop concentration, performed from drop size spectra inductor contents, show that considerated from drop size spectra inductor contents, show that considerated from from into the similar exist in drand. So intuited the arctic regions than in similar clouds in moderate latitudes. Over 1500 water content measurements and Sc. From the results of may be a finally that, for the same at the consideration which into the same in the consideration of the same for the same for drand for drand from the mean water content warrations, which reached a same for drand from the greatest water content variations, which reached a and upper regions of the clouds. Maximum water contents were found, as expected, in the same regions, i.e. at the beginning of inversion. Abstractor's hote: Complete translation.

Card 3/3

9,9500 3,5000

s/050/60/000/011/002/005 B012/B063

AUTHORS:

Voskresenskiy, A. I. and Matveyev, L. T.

TITLE:

Water Content and Turbulence of Stratocumulus Clouds in the

PERIODICAL:

Meteorologiya i gidrologiya, 1960, No. 11, pp. 14-19

The first papers on the subject mentioned in the title were published by P. A. Molchanov (Ref. 8), Ye. M. Kropotov (Ref. 3), M. Ye. Shvets (Ref. 11), and L. T. Matveyev (Refs. 5 and 6). During the last 5-8 years extensive observations of stratocumulus clouds in the Arctic Regions have been made with the participation of the author. These observations were made during the flights of the Letayushchaya laboratoriya Arkticheskogo i antarkticheskogo nauchno-issledovatel'skogo instituta (Flying Laboratory of the Arctic and Antarctic Scientific Research Institute) and two special-purpose expeditions. The equipment of the planes permitted an accurate measurement of temperature, air humidity, atmospheric pressure, altitude, velocity, as well as the

Water Content and Turbulence of Stratocumulus Clouds in the Arctic Regions

S/050/60/000/011/002/005 B012/B063

optical density and water content of the clouds, overloading of the planes, and micropulsation of temperature. The data obtained for the humidity and turbulence of Arctic stratocumulus clouds are presented and analyzed. The major part of these observations were made between July and September over the regions, free from ice, of the Karskoye Sea, Laptevykh Sea, and the East Siberian Sea. The water content was measured with an CMB-3 (SIV-3) instrument designed by V. A. Zaytsev and A. A. Ledokhovich. Most of the measurements were made for St and Sc clouds which have a frequency of 75-80% in the Arctic Regions. It is shown that on an average Sc clouds have a higher water content than St clouds. The average water content of St clouds is 0.10 g/m<sup>3</sup>, and that of Sc clouds, 0.14 g/m<sup>3</sup>. The turbulence of clouds was studied in summer 1957 and 1958. The overloading of the planes was recorded with a transmitter and an optical self-recorder. The transmitter was placed at the center of gravity of the planes. The values obtained were used to calculate the coefficient of turbulence, the vertical velocity, and the dimensions of the turbulent formations. The calculation of k (coefficient of turbulent vertical exchange was based on formula (1):

Card 2/9

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

ıχ

Water Content and Turbulence of Stratocumulus Clouds in the Arctic Regions

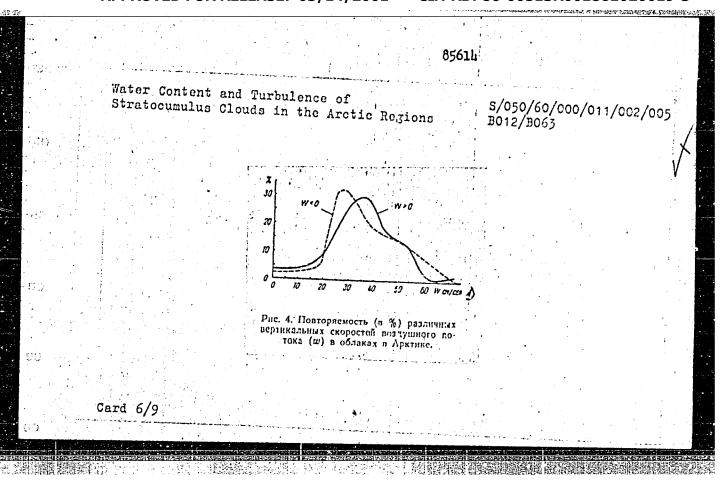
S/050/60/000/011/002/005 B012/B063

 $k = \frac{b\tau}{\Delta} | \overline{\Delta n} |$ , where  $| \overline{\Delta n} |$  is the mean absolute vertical overload of the plane;  $\tau$  is the average time for which the sign of the overload does not change;  $\Delta = \frac{c}{2}$  is the relative air density at the plane's altitude (% is the air density on sea-level); and b is a coefficient depending on the parameters of the plane. This formula was derived by Ye. S. Lyapin (Ref. 4) and A. S. Monin (Ref. 10). This formula was used by A. S. Dubov (Ref. 2), P. A. Vorontsov (Ref. 1), and L. T. Matveyev (Ref. 7). The relationship between the vertical velocity w of the aircurrent and the overloading of the plane is given as  $w = \frac{b}{v\Delta} (\Delta n)$  (2), where v is the actual speed of the plane, and  $\Delta n$  is the overloading of the plane. The measurements of the overloading were evaluated by the method described in Refs. 1, 2, and 7. Results are given in Tables 2, 3, and 4 and in Fig. 4. There are 4 figures, 4 tables, and 11 Soviet references.

Card 3/9

```
85614
 Water Content and Turbulence of
 Stratocumulus Clouds in the Arctic Regions
                                                       5/050/60/000/011/002/005
                                                       B012/B063
 Text to Table 2:
 Mean Values of the Coefficient of Turbulence (k)
 1) Geographic area and season; 2) Form of cloud; 3) Temperate latitudes,
 winter; 4) Arctic Regions, summer; 5) k (m<sup>2</sup>/sec)
 Text to Table 3:
Frequency of the Various Values of the Coefficient of Turbulence (k).
In the numerator - %; in the denominator - number of cases
1) Place of the determination of k
2) Graduation of k (m^2/sec)
3) Temperate latitudes, winter
4) In the clouds
5) Outside the clouds
6) Arctic Regions, summer
7 Beneath the clouds 8 In the clouds
9) Above the clouds
Card 4/9
```

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 856114                                                                                                                              |                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water Content and Turbulence of<br>Stratocumulus Clouds in the Arctic Regions                                                       | \$/050/60/000/011/002/00<br>B012/B063 |
| -10<br>-10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Text to Table 4: Frequency of the Variance                                                                                          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Frequency of the Various Dimensions (L) of the the Overloading of the Planes (Arctic Regions) in the denominator - number of cases. | Turbulent Particles Causin            |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1) Graduation of t / humber of cases.                                                                                               | In the numerator - %;                 |
| 41 H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2) Beneath the clouds 3) In the clouds                                                                                              |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4) Above the clouds                                                                                                                 |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Text to Dia                                                                                                                         |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Frequency (expressed in percents) of the Variou of the Air Current in Arctic Clouds.                                                | 18 Vertical water                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1) cm/sec In Arctic Clouds.                                                                                                         | velocities (w)                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                     |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                     | 1                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                     |                                       |
| 25 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                     |                                       |
| 2011   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100 | Cond 5/0                                                                                                                            |                                       |
| 2 <b>8</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Card 5/9                                                                                                                            |                                       |
| 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Card 5/9                                                                                                                            |                                       |



| garvenabe uneversity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | S/050/60/000/011/002/005<br>B012/B063                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Повторяемость разз<br>В чись    | Таблица З<br>пичных значений коэффициента турбулентности (k).<br>пителе — %, в знаменателе — число случаев                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1) Место определения k          | 2) Градации к (м²/сек) 10 10-20 20-30'39-40 40-50'50-60'60-70'70-80! 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | Умеренине широты, зима                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4) В облаках                    | $ \begin{vmatrix} \frac{2.1}{1} \\ - \end{vmatrix} - \begin{vmatrix} \frac{2.1}{1} \\ \frac{13.0}{6} \end{vmatrix} \begin{vmatrix} \frac{28.4}{13} \\ \frac{13}{12} \end{vmatrix} \begin{vmatrix} \frac{26.2}{12} \\ \frac{13.0}{6} \end{vmatrix} \begin{vmatrix} \frac{6.5}{3} \\ \frac{3}{4} \end{vmatrix} = \frac{8.7}{4} $ $ - \begin{vmatrix} \frac{53.9}{28} \\ \frac{15.4}{8} \end{vmatrix} \begin{vmatrix} \frac{9.6}{5} \\ \frac{7.7}{4} \end{vmatrix} \begin{vmatrix} \frac{7.7}{1} \\ \frac{1.9}{1} \end{vmatrix} \begin{vmatrix} \frac{1.9}{1} \\ \frac{1}{3} \end{vmatrix} \begin{vmatrix} \frac{5.8}{3} \\ \frac{3.8}{2} \end{vmatrix} $ |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | 6) Арктика, лето                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7) Под облаками                 | $\begin{array}{ c c c c c c c c c c c c c c c c c c c$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Card 7/9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8) В облаках<br>9) Над облаками | $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | 7 16 7 6 4 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| en and the second secon |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| S/050/60/000/011/002/005   B012/B063   Tagalaga 4                                                                                                                                                                                                                                                                      |          |                                                 | 85614                                     |                    |                        |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------|-------------------------------------------|--------------------|------------------------|--------------|
| Повторяемость различных размеров (L) турбулентных частии, вызывающих перегрузкя самолета (Арктика). В числителс — Че, в знаменателе — число случаев  У Градации L (ж): Э Под облаками 3) В облаках У Над облаками  190-200                                                                                             |          |                                                 |                                           | S/050/0<br>B012/B0 | 60/000/011/002/<br>063 | <b>/</b> 005 |
| У Градации L (ж)     Э Под облаками     3) В облаках     У Над облаками       100     0.9 1 5.3 1 1.8 1.1       130-200     73.3 73.1 49.1 23       200-300     6.9 8 12.8 10     15.8 9       300-400     2.6 3.8 3 5.3 3       400-500     2.6 2.6 3.5 2       500-600     4.3 5 2     8.8 5       500-600     8.8 5 |          | Повторяемость различных р<br>самолета (Арктика) | азмеров (L) турбуле<br>. В числителе — %, |                    | Tak                    |              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                 |          |                                                 | 1                                         |                    |                        |              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                 |          | < 100                                           | T                                         | 6.4                | 1.8                    |              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                 |          |                                                 |                                           |                    | 49.1                   |              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                 |          |                                                 | 1                                         |                    |                        |              |
| $\frac{4.3}{5}$ $\frac{8.8}{5}$                                                                                                                                                                                                                                                                                        |          |                                                 |                                           | 2.6                | ł .                    |              |
| Card 8/9 600-700 0.9                                                                                                                                                                                                                                                                                                   |          | 500 – 600                                       | 4.3                                       |                    |                        | • !          |
|                                                                                                                                                                                                                                                                                                                        | Card 8/9 | 600—700                                         | 0.9                                       | -                  |                        |              |

| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | the state of the s |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2/252/55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3/050/60/000/011/002/005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | E012/E063                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 경기 회에 지역하는 경험 보고 있다는 그는 본 수가 하게 되는 없다.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | The state of the s |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 700—800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| $\frac{4}{2.6}$ $\frac{1}{3}$ $\frac{1.8}{1}$          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | $\frac{7.00}{4}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| $\frac{4}{2.6}$ $\frac{1}{3}$ $\frac{1.8}{1}$          | 800—900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | $\frac{1}{4}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                        | 900—1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Card 9/9                                               | and the second of the same to be and the second of the second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Card 9/9                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AND AND THE RESIDENCE OF A SECOND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Card 9/9                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 30                                                     | Card 9/9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                        | Secretary or programme is not a programme to the second secretary to the second | the state of the s |
|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Service of the servic |
|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

CIA-RDP86-00513R001861020019-3

CHARAKHCH'YAN, I.N., inzh.; VOSKRESENSKIY, A.P., kand. tekhn. nauk

Effect of a method for casting and insulating a short-circuited cage from the rotor core on the indices of an asynchronous motor. Elektrotekhnika 35 no.1:38-41 Ja '64.

(MIRA 17:2)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

VOSKRESEISKII, A.P., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; SEREBRYAKOV, N.I.

Collector three-phase "Schrage" system shunt motors for wool spinning machines. Tekst. prom. 24 no.5:73-76 Ny '64 (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektromekhaniki (VNIIFM) (for Voskresenskiy). 2. Nachal'nik konstrukstorskogo sektora Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki (for Serebryakov).

#### "APPROVED FOR RELEASE: 03/14/2001 CI

CIA-RDP86-00513R001861020019-3

VOSKRESHISKIY, A.P., kand. tekhn. nauk; EUZNETSOV, B.I., inzh.

Improvement of the characteristics of short-circuited induction motors with cast aluminum rotor cages. Elektrotekhmika 35 nc.5:6-9 My\*64 (MIRA 17:8)

VOSKPESENSKIY, A. Pr Cand Tech Sci -- (diss) "Study of the effect of unevenair upon the characteristics of asynchronous electric motors." Mos. 1957. 12 pp (Sci Res Inst of Electrical-Engineering Industry." (KL, 42-57, 93)

-26-

AUTHOR:

Voskresenskiy A.P., Engineer (Scientific Research Institute of the Ministry of the Electro-technical Industry NIIMEP).

The influence of non-uniformity of the air gap on the characteristics of an induction motor. (Vliyaniye neravnomer-TITIE: nosti vozdushnogo azaora na kharakteristiki asinkhronnogo

elektrodvigatelya.)

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry), 1957, Vol. 28, No. 5, pp. 35 - 38, (U.S.S.R.)

ABSTRACT:

This article gives the results of investigations into the influence of non-uniformity of the air gap in induction motors on the magnetic field, the reactance, the losses and the starting characteristics. In this work the magnetic induction due to the main harmonic is determined with allowance for saturation, Higher harmonics of magnetic induction are taken as proportional to the corresponding harmonics of m.m.f. but allowance is made for the finite permeability of steel. These assumptions were made on the basis of graphical and experimental investigation of magnetic induction in a nonuniform air gap. The path of higher harmonics of magnetic induction was assumed to be the same as for the main harmonic. The magnetic field is assumed to be plane-parallel. In the axial direction, the current is supposed to alter sinusoidally with time. An expression is formulated for the length of the air gap as a function of the eccentricity, an expression is derived for the m.m.f. with a non-uniform air gap and the magnetic induction in the air gap is calculated. Calculations

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

The influence of non-uniformity of the air gap on the 421 characteristics of an induction motor. (Cont.)

are then made to determine the coefficients of relative conductivity of the magnetic circuit for the main harmonic of the m.m.f., the reactances and the torques. The experimental results obtained by tests on induction motors with given for the increase in starting time and it figures are

given for the increase in starting time and in the iron loss. It is concluded that in investigating electro-magnetic processes in induction motors with a non-uniform airgap it is necessary to allow for the finite conductivity and saturation of the magnetic steel. Non-uniformity of the air gap has a particularly marked influence on the field of higher harmonics of m.m.f. The differential dispersion reactance is considerably increased with a non-uniform air gap but the reactance of the main contour is little changed. The maximum torques of the higher harmonics increase in proportion to the mean conductivity of the equivalent air gap of the machine. If the non-uniformity of the air gap is 0.8 the iron loss is increased by 15 to 30%, and the machine efficiency is reduced by 1.5 to 2%. The power factor remains practically unaltered for large displacements of the rotor.

4 figures, 3 literature references (1 Russian).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

7、2012年2月1日東京新聞館

## VOSKRESENSKIY, A.P.

AUTHOR: Voskresenskiy, A.P., Engineer 1.10-4-5/25

One-sided Magnetic Pull in Induction Motors (Odnostoronneye TITLE: magnitnoye prityazheniye v asinkhronnykh elektrodvigatelyakh)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, No. 4, VOL 39 pp. 15 - 18 (USSR)

One-sided magnetic forces appear in induction motors if ABSTRACT: the air-gap is not uniform. Although it is important to determine such forces accurately, the methods published hitherto give unreliable results. The magnetic forces in a motor, type AO-52-4 with an eccentricity of 0.5 in the mean air-gap are calculated from the formulae of several authors and plotted in Fig.1 to show the discrepancies. In the present article, formulae are derived for the one-sided magnetic pull and experimental data are given: the work was under the scientific leadership of Prof. T.G. Soroker, Doctor of Technical Sciences. A formula is then derived for the one-sided magnetic pull. When whipping of the rotor occurs, rotation takes place around an axis other than the centre line of the rotor and the one-sided magnetic pull moves round the stator bore at the speed of rotation of the rotor.

The influence that parallel paths in the rotor winding have on Card 1/3 the magnetic forces is then examined. Each parallel path may be

其中的是是是是一个人,但是一个人,就是一个人,但是一个人,也是一个人,也是一个人,也是一个人,也是一个人,也是一个人,也是一个人,也是一个人,也是一个人,也是一

One-sided Magnetic Pull in Induction Motors

110-4-5/25

distributed over the entire bore of the stator or only over a definite part of it. In this latter case, the presence of the parallel path must be allowed for; a suitable formula is given. For experimental determinations of the forces, an equipment was constructed that consists essentially of a motor in which the position of the rotor can be adjusted, as illustrated in Fig. 2. Curves of calculated and test data for the one-sided magnetic pull for an electric motor type A0-52-6, with various amounts of rotor displacement and with the winding supplied with direct current, are plotted in Fig. 3. Direct current was used, to simulate ideal and no-load conditions. The theoretical and test curves are in satisfactory agreement and show that formula 3 of the article is valid, when the number of poles is greater then two. Similar forces can also be set up in two-pole machines, but in this case the forces determined by the formula must be multiplied by a factor of 0.8. Measurements were also made of the force as a function of the short-circuit current for motor type AO-52-6. The maximum values of the forces under short-circuit conditions are the same as when the windings are supplied with direct current. The Card 2/3 magnetic pull was also determined after the squirrel-cage had

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

One-sided Magnetic Pull in Induction Motors

110-4-5/25

The state of the second second second is the second second

been removed, a condition equivalent to operation at no-load with the rotor stationary. It will be seen from Fig. 4 that the forces with direct and alternating current are in good agreement. Finally, an approximate formula is given, valid for determining the maximum value of the one-sided magnetic pull in a number of cases.

There are 4 figures and 5 references, of which 3 are Russian

and 2 English.

ASSOCIATION: NII EP

AVAILABLE:

Library of Congress

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

ZAKHAROV, N.N., prof.; RAZUMOV, I.M., doktor ekon.nauk,prof.,red.;

BOYTSOV, V.V., doktor tekhn. nauk,prof., red.; VLASOV, B.V.,

doktor tekhn.nauk,prof.,red.; VOSKRESENSKIY, B.V., inzh.,

red.; KUZ'MIN, V.V., inzh., red.; LETENKO, V.A., kand.ekon.

nauk, dots., red.; SOKOLITSYN, S.A., kand. tekhn. nauk, red.;

SHUKHGAL'TER, L.Ya., kand. tekhn. nauk, dots., red.;

SEMENOVA, M.M., red.izd-va; SALAZKOV, N.P., tekhn. red.;

EL'KIND, V.D., tekhn. red.

[Establishment of technical norms and the organization of labor and wages in machinery manufacturing] Tekhnicheskoe normirovanie, organizatsiia truda i zarabotnoi platy v mashinostroenii. Moskva, Izd-vo "Mashinostroenie," 1964. 338 p. (MIRA 16:7)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

# DMITRIYEVA, A.J.; VOSKRESENSKIY, B.V.

Use of staphylococcal anatoxin for prevention of supparative diseases in puerperants and newforn infents. Akush. i gin. 40 no.1:22-25 Ja-F 164. (MIRA 17:8)

1. Rodil'nyy dom No.16 (glavnyy vrach A.I. Dmitriyeva) i Institut epidemiologii i mikrobiologii imeni N.F. Camalei, Moskva.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

GUSAROV, V.N.; VOSKRESENSKIY, B.V.; RYSS, M.A.; DMITRIYEVA, G.V.; DMITRIYEVA, R.Ye.; KOTIYAROVA, T.V.; SVET, Ye.B., red.

[Chelyabinsk electrometallurgy workers are striving for technical progress] Cheliabinskie elektrometallurgi v bor'be za tekhnicheskii progress. Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1963. 94 p. (MIRA 17:8)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

VOSKRESHISKIY, B.V.; MANILOVSKIY, R.G.; RAZUMOV, N.A., inzh., retsenzent; LYUBOVICH, Yu.O., kand. ekon. nauk, red.

[Production capacity of a machinery plant] Proizvodstvonnaia moshchnost' mashinostroitel'nogo zavoda. Moskva, Izdvo "Mashinostroenie," 1964. 271 p. (MIRA 17:7)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

# Public office of economic analysis. Mashinostroitel\* no.11:41-42 H \*60. (MIRA 13:10) (Sverdlovsk--Turbomachines--Technological innovations)

VERSHILOVA, P.A., prof.; COLUBEVA, A.A.; KAYTMAZOVA, Ye.I.;
OSTROVSKAYA, N.N.; KHODZHAYEV, Sh.Kh.; VOSKRESENSKIY, B.V.,
red.; LYUDKOVSKAYA, N.I., tekhm. red.

[Brucellosis; a handbook for physicians]Brutsellez; rukovodstvo dlia vrachei. Moskva, Medgiz, 1961. 413 p. (MIRA 15:10) (BRUCELLOSIS)

GUSAROV, V.N.; VOSKRESENSKIY, B.V.; RYSS, M.A.

Production of 75-percent ferrosilicon in rotary hearth furnaces.

(MIRA 15:3)

Stal! 22 no.33240-242 Mr 162.

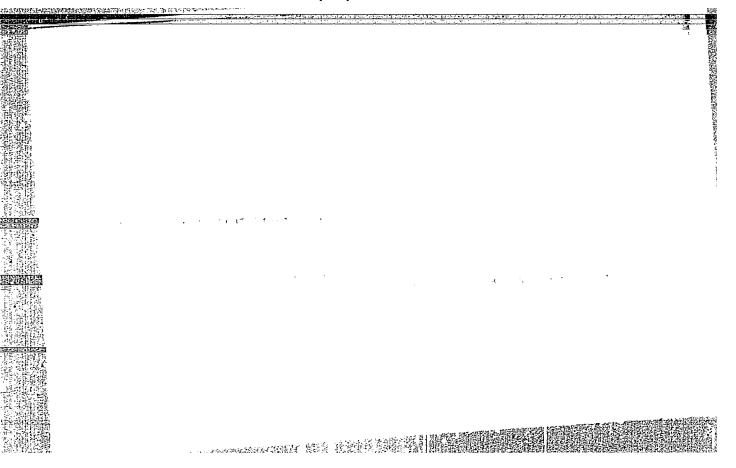
(Ferrosilicon—Metallurgy) (Rotary hearth furnaces)

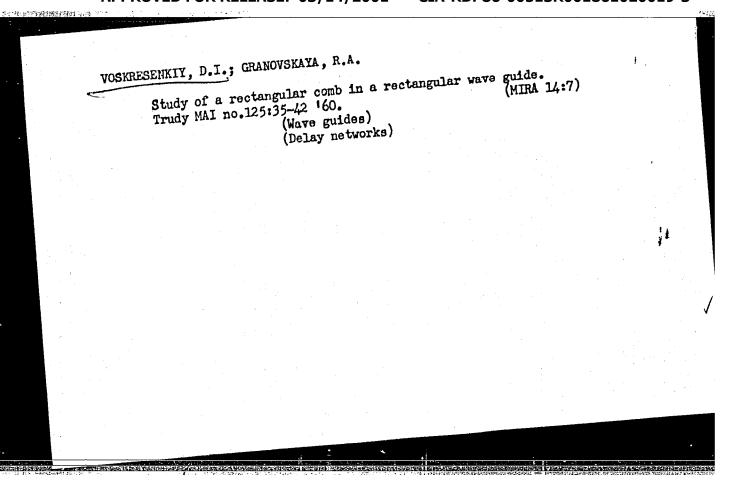
VOSKRESENSKIY, B.V., inzh.

Economic efficiency of the reconstruction of machinery plants.

Economic efficiency of the reconstruction of machinery plants.

Vest. mashinostr. 44 no.8:72-77 Ag '64. (MIRA 17:9)





VOSKRESENSKIY, D.I.; GRANOVSKAYA, R.A.; DERYUGIN, L.N. Investigation of an "opposing rods"-type delay system. Trudy
(MIRA 14:7) MAI no. 125:67-91 160. (Wave guides) (Delay networks)

### "APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020019-3

VOSKRESENSKIY, D.I.; GRANOVSKAYA, R.A.

Investigation of a single-thread spiral in a circular wave guide.

Trudy MAI no.125:92-97 '60.

(Wave guides)

(Delay networks)

VOSKRESENSKIY, D.I.; GRANOVSKAYA, R.A.; DERYUGIN, L.N.; FEDOROV, S.I.

Investigation of a delay system with noncontacting plates.

(MIRA 14:7)

Trudy MAI no.125:43-66 160.

(Wave guides) (Delay networks) (Traveling—Wave tubes)

VOSKRESENSKIY, D.I.; GRANOVSKAYA, R.A.

Study of a "spiral groove"-type delay system. Trudy MAI
(MIRA 14:7)
(being networks)
(Wave guides)

VOSKRESENSKIY, D.I., kand. tekhn. nauk; GRANOVSKAYA, R.A., kand. tekhn.

nauk

Channeling systems of antennas with special form and electronic (MIRA 17:12)
scanning. Trudy MAI no.159:111-123 '64.

VOSKRESENSKIY, F.F.; SLAVSKIY, Yu.N.

New device for drilling deep holes. Razved. i okh. nedr 27 no.1: (MIRA 17:2) 23-26 Ja 161.

1. Vsesoguznyy nauchno-issledovatel'skiy institut burovoy tekhniki.

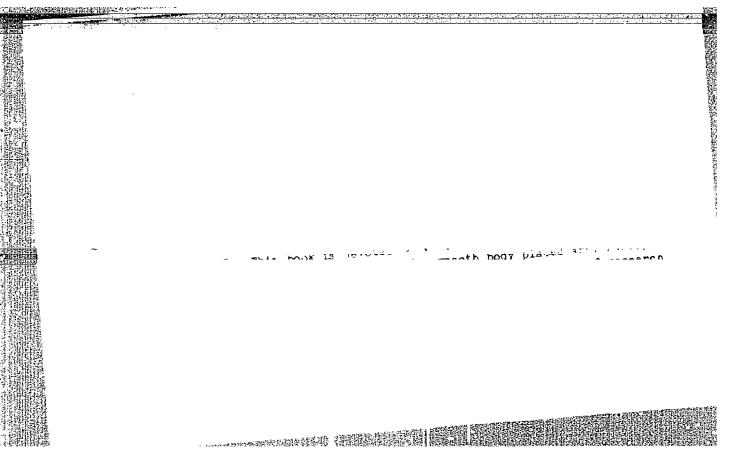
VOSKRESENSKIY, Fedor Fedorovich; DUBROVINA, N.D., ved. red.;
YAKOVLEVA, Z.I., tekhn. red.

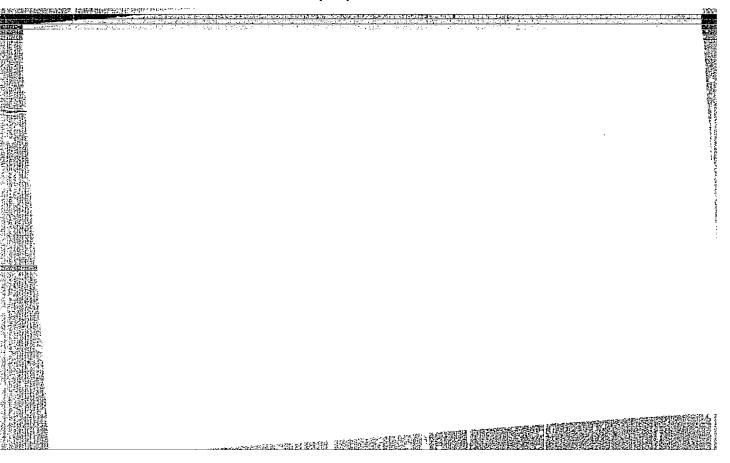
[Valve-type percussion drilling rigs] Burovye klapannye ma-shiny udarnogo deistviia. Moskva, Gostoptekhizdat, 1963. 84 p. (MIRA 16:8)

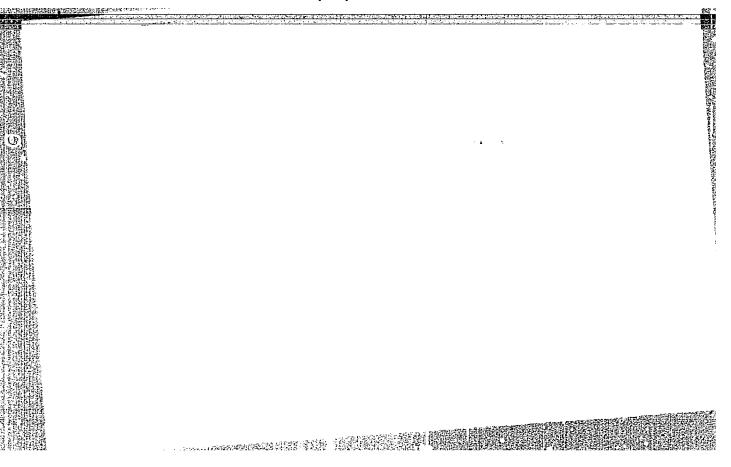
(Boring machinery)

\_VOSKRESENSKIY, Georgiy Ivanovich; TYLKIN, M.N., red.; PULIN, L.I., tekhn.

[Workers' meetings; studies on conducting general meetings of workers and employees]Rabochie sobraniia; ocherki ob opyte provedeniia obshchikh sobranii rabochikh i sluzhashchikh. Tula, Tul'skos knizhnoe shchikh sobranii rabochikh i sluzhashchikh. Tula, Tul'skos knizhnoe (MIRA 14:7) izd-vo, 1960. 46 p. (Tula Province-Works councils)







BIRKGAN, A.Yu.; VOSKRESENSKIY, G.P.; DI KAREVA, A.I., red.; SVESINIKOV,
A.A., tekhn. red.

[Programming for the "Ural-2" digital computer]Programmirovanie
[Programming for typhialital noi mashiny "Ural-2". Moskva, Sodilia taifrovoi vychialital noi mashiny "Ural-2". (MIRA 15:9)
vetskoe radio, 1962. 206 p.
vetskoe radio, 1962. 206 p.
(Electronic digital computers---Programming)

14190 5/109/62/007/012/007/021 D266/D308

9,4230

AUTHORS:

Burshteyn, E. L. and Voskresenskiy, G. V.

TITLE:

Energy approach to the radiation field of uniformly moving charged particles in slow wave structures

Radiotekhnika i elektronika, v. 7, no. 12, 1962,

PERIODICAL:

TEXT: The authors derive some basic relationships between the parameters of the radiation field and those of the electron-slow rameters of the radiation field and those of the electron-slow wave structure configuration without specifying the structure in detail. It is assumed that the field excited by the moving charged particle is localized in the half-space behind the particle, and particle is localized in the superposition of waveguide modes proparation be represented by the superposition of the particle. The can be represented by the superposition of the particle. The gating with a phase velocity equal to that of the slow wave structure intensity of the electric field on the laxis of the slow wave. intensity of the electric field on the axis of the slow wave structure is

 $E = E_0 e^{-\alpha z_e i (he - \omega t - \delta)}$ 

Card 1/4

s/109/62/007/012/007/021 D266/D308

Energy approach to

complex field amplitude at z = 0,  $\alpha$  - attenuation coefficient,  $h(\omega)$  - propagation coefficient. Energy per unit distance is  $W_1 = p|E|^2$ , where p - coefficient depending on the detailed |X|structure of the field. If in this waveguide (slow wave structure) structure of the literature of there is a particle moving with velocity v (position  $z_1 = z_0 + vt$ ) it will excite a wave of frequency w determined by the dispersion equation (2)

$$\frac{\omega}{h(\omega)} = v \qquad ,$$

The axial component of the excited wave is then

$$i(hz-\omega t-hz_0) = \alpha_1(z_1-z) \qquad (z < z_1)$$

$$E_q = Aqe \qquad (3)$$

card 2/4

CIA-RDP86-00513R001861020019-3" **APPROVED FOR RELEASE: 03/14/2001** 

s/109/62/007/012/007/021 D266/D308

Energy approach to . unknown attenuation coefficient, amplitude. The energy relationship for these waves can be put in the form

$$dN = d\theta + dQ + dA$$

where de represents the energies due to the motion of the particle where as represents the energies are to the motion of the particle and to the attenuation of the excited wave, dQ - heat losses. dA - and to the attenuation of the excited wave, dQ - heat losses. dA - and to the attenuation of the excited wave, dQ - heat losses. dA - and work done by the field by moving the particle. Expressing the different sources of energy with the aid of previously introduced parameters and equating coefficients on the left and right-hand are obtained. side, the following three universal relationships are obtained:

$$e^{\operatorname{universur}} \qquad (15)$$

$$A_0 = 2p[(1 - v_g/v)]^{-1}$$
 (16)

Card 3/4

S/109/62/007/012/007/021 D266/D308

Energy approach to ...

$$\alpha_1 = \alpha \frac{\mathbf{v}}{\mathbf{v} - \mathbf{v}_g} \tag{18}$$

where v<sub>g</sub> - group velocity. Thus the phase, amplitude and attenuation coefficient of the excited wave can be expressed by the known properties of the waveguide mode. The total effect for a group of particles can be obtained by integration. There is 1 figure.

SUBMITTED: January 25, 1962

Card 4/4

BOLOTOVSKIY, B.M.; VOSKPESENSKIY, G.V. Radiation from a linear source resing near a diffraction grating formed by a system of ideally conducting half-planes. Thur. texh. fiz. 34 no.10:1856-1862 0 '64. (MIRA 17:12)

8/0057/64/034/004/0711/0717

ACCESSION NR: AP4028960

AUTHOR: Bolotovskiy, B.M.; Voskresenskiy, G.V. TITLE: Radiation of a point charge moving on the axis of a sedi-infinite circular

wavoguido

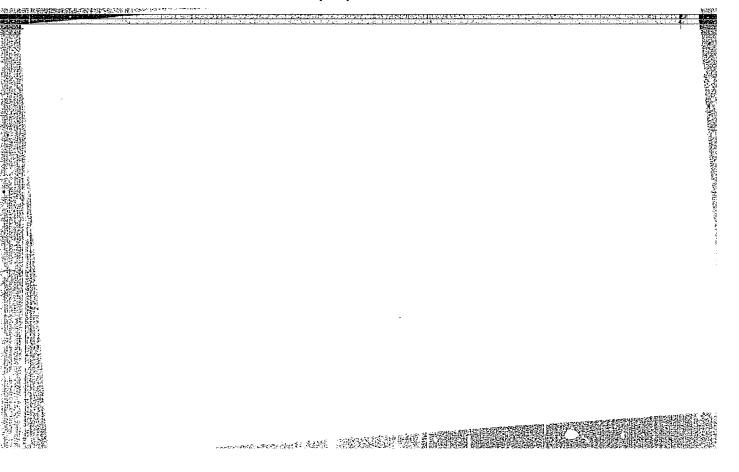
SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.4, 1964, 711-717

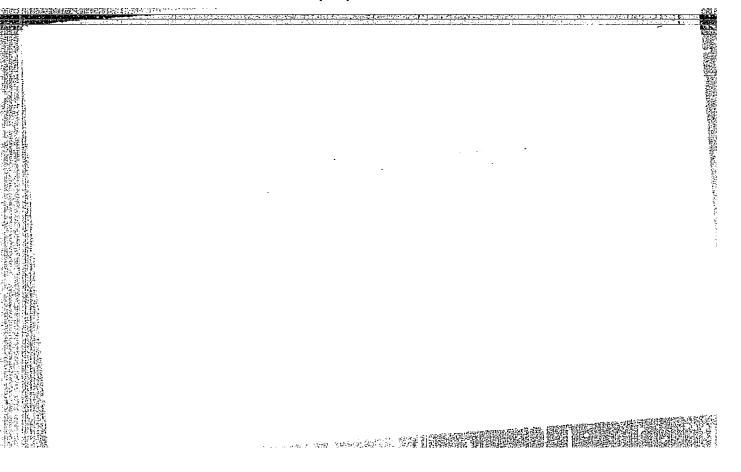
TOPIC TAGS: radiation, charged particle radiation, waveguide radiation

ABSTRACT: The authors calculate the radiation of a charged particle moving uniformly on the axis of a semi-infinite waveguide of circular cross section. The Hertz vector, of which the only non-vanishing component is that parallel to the axis of the waveguide, is expressed as the sum of two terms, of which one represents the field of the moving charge in empty space and the other is a correction term. The correction term is expanded in a Fourier integral in time, and the Fourier component is expressed in terms of the current in the waveguide wall. The current, already represented by its time Fourier transform, is expanded in a Fourier integral in the coordinate parallel to the waveguide axis. The boundary conditions on the waveguide are expressed as integral equations for the double Fourier transform of the current

Card 1/2

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |
| _     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | • |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |
|       | These are solved by the Wiener-Hopf method, and the radiation field is calculated. The radiation field within the waveguide is expanded in normal modes, and the energy that the each mode is calculated. The spectrum and angular distribution of the radiated into each mode is calculated. When the velocity of the particle is radiation outside the waveguide is derived. When the velocity of the particle is small, the radiation intensity decreases exponentially with increasing frequency. When the velocity is large, frequencies up to $\beta c/\alpha \sqrt{1-\beta^2}$ occur and the total energy when the velocity is large, frequencies up to $\beta c/\alpha \sqrt{1-\beta^2}$ occur and the total energy radiated is approximately $2e^2\beta/\pi\sqrt{1-\beta^2}$ . Here c is the velocity of light, $\beta$ is the radiated is approximately $2e^2\beta/\pi\sqrt{1-\beta^2}$ . Here c is the velocity of the charge of velocity of the particle, a is the radius of the waveguide, and e is the charge of the particle. The exact expressions for the angular and spectral distribution determined on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity, i.e., they depend on whether the particle enters pend on the sign of the velocity is a formula to the particle enters pend on the sign of the velocity is a formula to the particle in the particle is a pend on the sign of the velocity is a formula to the particle in the particle in the particle is a pend on the sign of the velocity is a pe |   |
|       | or leaves the waveguide. Orig.art.has: 36 lorautete                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |
| :     | or leaves the waveguide. Orig.art.nus:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |
|       | or leaves the waveguide. Orig.art.nus:  ASSOCIATION: none  DATE ACQ: 28Apr64  OWNER: 002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |
|       | or leaves the waveguide. Orig.art.nus:  ASSOCIATION: none  DATE ACQ: 28Apr64  SUBMITTED: 24Apr63  NR REF SOV: 004  OTHER: 002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |
| · ·   | or leaves the waveguide. Orig.art.nus:  ASSOCIATION: none  DATE ACQ: 28Apr64  OWNER: 002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - |
| · · · | or leaves the waveguide. Orig.art.nus:  ASSOCIATION: none  DATE ACQ: 28Apr64  SUBMITTED: 24Apr63  NR REF SOV: 004  OTHER: 002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |
|       | or leaves the waveguide. Orig.art.nus:  ASSOCIATION: none  DATE ACQ: 28Apr64  SUBMITTED: 24Apr63  NR REF SOV: 004  OTHER: 002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |





8/0020/64/156/005/1072/1074

ACCESSION NR: AP4040948

AUTHOR: Voskresenskiy, G. V.; Bolotovskiy, B. M. TITLE: Emission of a point-charged particle travelling along the axis of a semiinfinite circular waveguide

SOURCE: AN SSSR. Doklady\*, v. 156, no. 5, 1072-1074

TOPIC TAGS: waveguide, semi-infinite waveguide, charged particle, charged particle emission, point charged particle, point charged particle emission, practice, point charged particle emission, properties and the contract of the charged particle emission. equation, wave operator, electromagnetic wave diffraction, acoustic wave diffraction, Wiener-Hopf equation, Hertz vector

ABSTRACT: The authors examine a circular waveguide of radius a with ideallyconducting infinitely thin walls. The waveguide is open at one end. An r, ¢, z cylindrical system of coordinates was used with superposition of the waveguide axis on the z axis. It was assumed that the position of the waveguide walls is defined by the equations r = a and z > 0. It was further assumed that a point charged particle q travels along the waveguide axis with avelocity of u. The problem is to determine the emission generated when the particle enters the waveguide (u > 0) or when it exits the waveguide (u<o). The emission intensity at a frequency win the solid angle d 2 is equal to Card 1/3

|          | ACCESSION NR: AP4040948                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | ACCESSION NR: AP4040948 $W_{\omega}(\theta) d\Omega = \frac{\theta^{2}  u  (1-\beta)  \varphi_{1}(\omega/u) ^{2}}{4\pi^{2} c^{2}  \partial_{0}^{2}(k\gamma a) } \frac{J_{0}^{2}(k\alpha \sin \theta) \sin^{2} \theta d\Omega}{(1-\beta \cot \theta)^{2} (1-\cos \theta)  \varphi_{n}(k\cos \theta) ^{2}},$ (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|          | (Area 1 6 (kya)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|          | In the case of low charge velocities, the emission spectrum lies in the low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|          | Anguanay wango and gatisies the fiether of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1 7      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|          | In the case of high charge velocities (\$\sigma \text{21}, \gamma \text{0}), the emission spectrum lies in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|          | that range of frequencies which satisfy the inequality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|          | $\bullet < \frac{u}{\sqrt{1-\beta^2 a}} = \frac{a}{7a}.$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|          | Vi-Bia Ta                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|          | As far as high frequencies are concerned, use the fact that the function \$2 for as far as high frequencies are concerned, use the fact that the function \$2 for the exit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|          | high values of the argument terms to miles and with the edgumntion that the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|          | of the charge from the waveguide (u < 0) was examined with the fact charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the angles w-0 my emission of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated in the region of the fast charge was concentrated with the region of the fast charge was concentrated with the region of the fast char |
|          | Then $W_{\bullet}(3) = \frac{q^{\bullet} \sin^{\bullet} \theta}{4\pi^{\bullet} (1 - \beta \cos \theta)^{\bullet}}.$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|          | Then $W_{\bullet}(3) = \frac{1}{4\pi^2} \left(1 - \beta \cos \theta\right)^{\frac{1}{2}}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|          | Orig. art. has: 19 equations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|          | 哺子 司 (1997) [1997] " - 1997] " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997)" " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997)" " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) " (1997) |
|          | ASSOCIATION: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|          | ENOL: 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|          | SUBMITTED: 290ct63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|          | Cord 2/3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1977-015 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

s/0057/64/034/004/0704/0710

ACCESSION NR: AP4028959

AUTHOR: Bolotovskiy, B.M.; Voskresenskiy, G.V.

TITLE: Radiation of a line current or a line charge passing through the open end of a plane waveguide

SOURCE: Zhurnal tokhnicheskoy fiziki, v.34, no.4, 1964, 704-710

TOPIC TAGS: line current waveguide radiation, line charge waveguide radiation, particle open waveguide radiation

ABSTRACT: The authors discuss the radiation from a system consisting of an infinito line current at y m b, z m ut and two conducting half-planes y m in, z > 0. Here x, y, z are rectangular coordinates, t is the time, and a, b, and u are constant parameters. The case of a moving line charge is also discussed. The calculation was undertaken because it is the simplest that bears on the technically important question of the radiation of a charged particle entering or leaving the open end of a waveguide. The field of the moving line current is represented by the vector potential, of which only the x component does not vanish. The vector potential is expanded in a Fourier integral in t, and the Fourier component is expressed as the sum of

Card 1/3

ACCESSION NR: AP4028959

two terms, of which one represents the field of the moving line current in an infinite plane waveguide and the other is a correction term. The correction term is expressed in terms of currents in the (infinite) waveguide. The currents (which are already expressed by Fourier time transforms) are expanded in Fourier integrals in z, and the boundary conditions on  $y = \pm a$  that the total current vanish for  $z \le 0$ and the electric field vanish for z > 0 are written. The currents are obtained from these boundary conditions by the Wiener-Hopf method, and the radiation field is calculated. The field within the waveguide is expanded in normal modes, and the energy radiated into each mode is calculated. At high frequencies the radiation outside the waveguide is similar to that of a line current passing a single half-plane (B. M.Bolotovskiy and G.V.Voskresenskiy, ZhTF 34,11,1964). At lower frequencies the radiation distribution is dominated by waveguide resonance effects. For velocites near that of light, the radiation depends strongly on the sign of u, i.e., on whether the line current enters or leaves the waveguide. The radiation from a moving line charge is calculated similarly, the Hertz vector rather than the vector potential being used to describe the field, and the results are discussed briefly. Orig.art.has: 45 formulas and 1 figure.

|   |            |                                  | kly institut i                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | DATE ACQ: 28Apr64 |   |   | ENCL: 00   |       |
|---|------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---|---|------------|-------|
|   | SUBMITTED: |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NR REF SOV:       |   |   | OTHER: 001 | :     |
|   | SUB CODE:  | PH, GE                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | We for            |   |   |            | ;     |
|   |            | •                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |   |   |            | •     |
|   |            | •                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | •                 | • |   |            | 1     |
|   |            |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |   | • | •          | 4     |
|   |            |                                  | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | • |   |            | 1     |
|   |            |                                  | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | • |   | •          | • . 1 |
| : |            |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |   |   |            | • :   |
|   |            |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   | • |   | ومناسو     | ;     |
| • | Card 3/3   | مانستونیو بولیو در <sub>در</sub> | e de la company de la prima este de la prima este de la company de la prima este de la company de la |                   |   |   |            |       |

8/0020/64/156/004/0770/0773

AP4041140

AUTHOR: Voskresenskiy, G. V.; Bolotovskiy, B. M.; Leontovich, M. A. TITIE: Field of a charged filament moving uniformly in the vicinity of a

system of perfectly conducting semiplanes

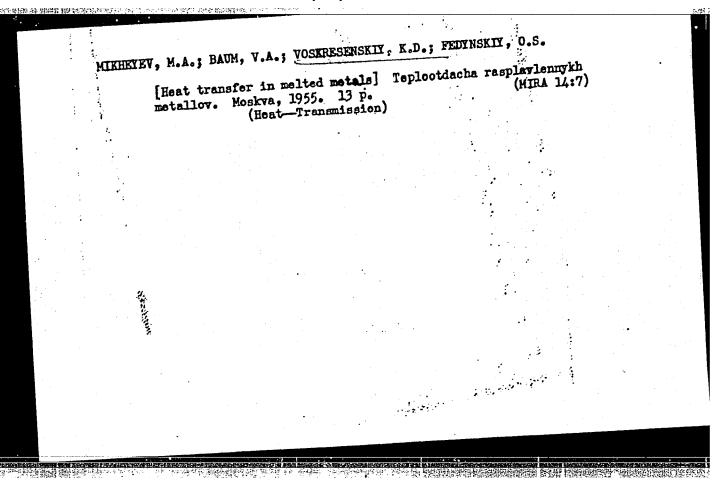
BOURCE: AN BSSR. Doklady\*, v. 156, no. 4, 1964, 770-773

TOPIC TAGS: moving charged filement, electromagnetic emission, linear periodic conducting media, diffraction grating, waveguide

ABSTRACT: The radiation by charged particles in linear periodic media has been investigated earlier by several authors using approximation methods. The present author considers a problem of this kind which permits a rigorous solution. A uniformly charged filement is assumed to move with a constant speed parallel to a system of perfectly conducting semiplanes. The electromagnetic field is described by a Hertz' vector, consisting of the field of the charged filement moving in empty space and of that due to the boundary conditions on metallic plates. The total energy flux emitted by this "waveguide" is computed. The frequency of the radiation is determined essentially by the number of plates passed by the source in

| ACCESSION NR: AP404                | 1140        |            |            | همودين بأريه معيد موديوسي |        |   |
|------------------------------------|-------------|------------|------------|---------------------------|--------|---|
| umit time, and its m               | ultiples. ( | orig. art. | has: 21 e  | quations.                 |        |   |
| ASSOCIATION: None                  |             |            |            | ENCL                      | : 00   |   |
| SUBMITTED: 290at63<br>SUB CODE: NP | Ä           | o ref sov: | <b>008</b> | OTHE                      | R: 001 |   |
|                                    |             |            |            |                           |        |   |
|                                    | 1           |            |            |                           |        |   |
|                                    |             |            |            |                           |        | - |
|                                    |             |            |            |                           |        |   |
|                                    |             |            |            |                           |        |   |

Radiation from a single charge in a semi-infinite wave guide
Radiation from a single charge in a semi-infinite wave guide
filled with a dielectric substance. Zhur.tekh.fis. 33 no.1;
MIRA 16:2)
34-42 Ja '63.
(Wave guides)
(Dynamics of a particle)



VOSKRESENSKII, K. D.

Shornik zadach po teploperedache. Pod red. M. A. Mikheeva. Dop. v kachestve uchebn. posobiia dlia energ. vtuzov i fak-ov. Hoskva, Cosenergoizdat, 1951. 168 p. diagrs.

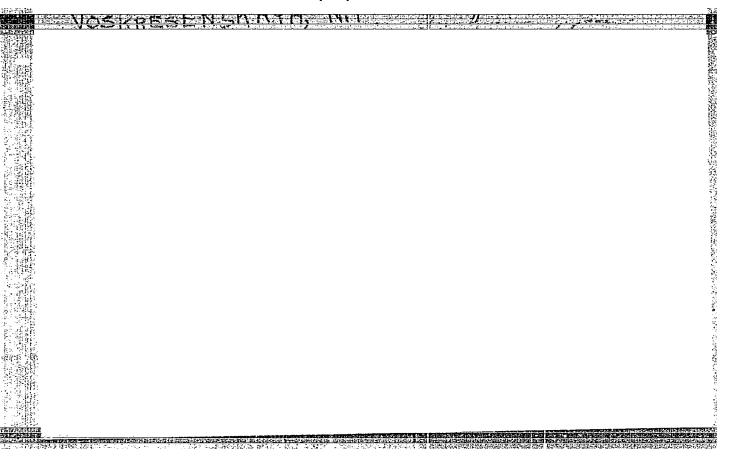
"Sbornik sostavlen primenitel'no k uchetniku M. A. Mikheeva 'Osnovy teploperedachi,' izd. 1949 g." see Entry 191

Bibliography: p (167)-168

Collection of problems in heat-transfer.

DLC: QC320.V6

SO: Manufacturing and Mcchanical Engineering in the Soviet Union, Library of Congress, 1953.



#### Vockresenskaya, W.T.

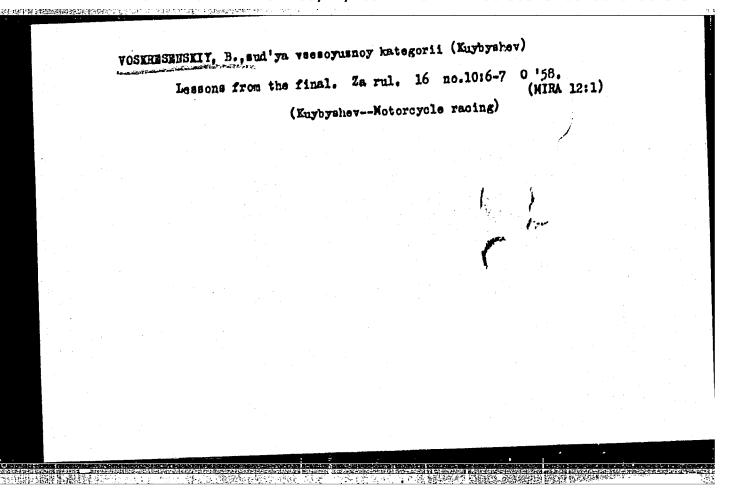
Colorimetric determination of small quantities of thallium. Zhur.anal. (MLRA 10:1) khim. 11 no.5:585-589 S-0 '56. MANAGER STATE OF THE STATE OF T

1. Hoskovskiy gosudartstvennyy umiversitet imeni H.W. Lomonosova. (Celerimetry) (Thallium)

## VOSKRESENSKIY, Aleksandr Aleksandrovich

[Revolutionary struggle of workers in the Kharkov Locomotive Factory, 1895-1917; a brief historical account] Revolutationnals bor'ba rabochikh Khar'kovskogo parovozostroital'nogo zavoda. bor'ba rabochikh Khar'kovskogo parovozostroital'nogo zavoda. 1895-1917 gg.; kratkii istoricheskii ocherk. Khar'kov, Izd-vo 1895-1917 gg.; kratkii istoricheskii ocherk. Khar'kov, 1958. 236 p. Khar'kovskogo gos. universitata im. A.M. Gor'kogo. 1958. (MIRA 12:5)

(Kharkov--Locomotive works)



Q-3

USSR/Farm initials - Poultry.

: Ref Whur - Biol., No 1, 1959, 2732

: Ozerov, A.V., Puchkov, Ye.A., Voskresenskiy, B.A. Abs Jour

: Roscow Agricultural Academy imeni K.A. Timiryazev Author.

: Zochyclenic Assessment of the Uninterance of Chicks on Inst

Title

: Dokl. Nosk s.-kh. akad. im. K. Timiryazeva, 1957, Vyp. Orig Pub

30, ch. 2, 234-239.

: The thickness of the litter layer consisting of minutes Abstract

wood shavings was 3-4 cm at the beginning of the tes, and 20-22 on at the end of 3 months. Once every 1.5-2 weeks it was overlain by a layer of clean and dry lining. The density of the rearing of chicks was 12-14 head per sq. noter of floor area. The temperature of the litter

increased as it grew thicker. It exceeded air temperature

DECEMBER DESCRIPTION OF THE PROPERTY OF THE PR

by 5-6°C. The chicks Crew and developed well.

Card 1/1

ZHIDKIKH, Z.A., kand. sel'skokhozyaystvennykh nauk; OZEROV, A.V., doktor vet. nauk; VOSKRESENSKIY, B.A., vet. vrach.

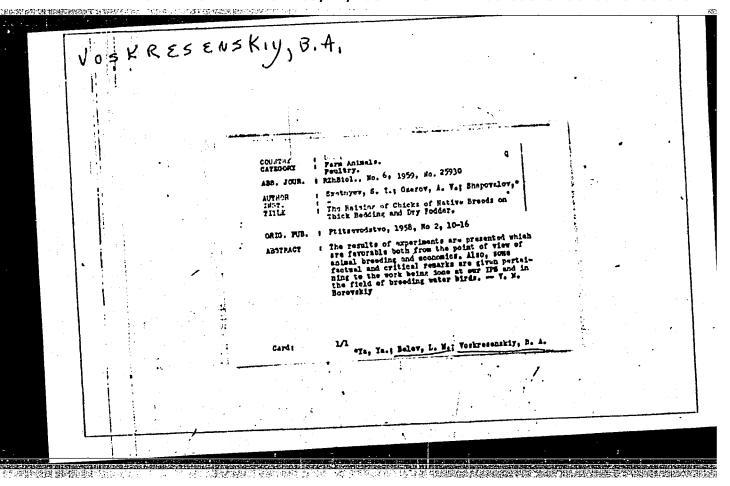
Raising young turkeys for meat on deep litter and dry feeds.

(MIRA 11:5)

Ptitsevodstvo 8 no.5:16-20 My '58.

(Turkeys-Feeding and feeding stuffs)

(Hitter (Bedding))



#### "APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020019-3

OZEROV, A.V., prof.; VOSKRESENSKIT, B.A., votvrach

Evaluating the method of keeping chicks on deep litter from a no.5:57-58 hygianic point of view. Zhivotnovodutvo 2 no.5:57-58 (NIRA 12:7)

Wy '59. (Poultry) (Litter (Badding))

```
VOSKRESENSKIY, B. V.

29192 Tekhnicheskiy nadzor za eksploatsiey instrumenta v potochno-massovom proizvodstva. (Gor'k. uvtozavod im. Molotova). Avtomob. prom-st', 1949, No. 9, s. 9-11

S0: Litopis' Zhurnal nykh Statey, Vol. 39, Moskov, 1949
```

VOSKRESENSKIY, B.V.; DMITRIYEVA, A.I.; LEBEDEVA, Z.I.

Experience in the prevention of staphylococcal diseases in maternity Experience in the prevention of staphylococcal diseases in homes by immunizing pregnant women with staphylococcal toxoid. homes by immunizing pregnant women with staphylococcal toxoid. Thur.mikrobiol.epid.i immun. 32 no.1:33-39 Ja '61. (MIRA 14:6)

1. Iz Instituta epidemiologii i mikrobiologii imeni fiamalei
AMN SSSR i Moskovskogo rodil'nogo doma No.16.
(STAPHYLOCOCCAL INFECTIONS) (PREGNANCY, COMPLICATIONS OF)

UDSKREJENSKIY, B.U.

VOSKRUSENSKIY, B.V., red.; UVAROVA, A.F., tekhn.red.

[Determination of the production capacity in machine mammfacturing; methods and practices] Opredelenie proizvodstvennykh moshchnostei v mashinostroenii; metodika i praktika. Pod red. b.v.boskreseuskogo. mashinostroenii; metodika i praktika. Pod red. b.v.boskreseuskogo. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. 1957. 185 p. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.

1. Moskovskiy dom nauchno-tekhnicheskoy propagandy imeni F.L.
Dzerzhinskogo.
(Machinery industry)

VOSKRESENSKIY, B,V., LEBEDEVA, Z.I.

Antigenic and immunogenic properties of staphylococcal anatoxins prepared on meat and casein culture media. Zhur, mikrobiol. epid. (NIRA 11:10) i immun. 29 no.9:16-20 S'58

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei ANN SSSR. (PYCOCENES.

anatoxins prep. on meat & casein media (Rus))

#### VOSKRESENSKIY, B.V.

Epidemiology and prevention of tetamus in the Ukraine, during 1951-1955.

Zhur. mikrobiol. epid. i immun. 29 no.11:12-16 N '58. (NIRA 12:1)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR. (TETANUS, epidemiol. & pray. (Rus))

| Antigenic relationship in combined immunization; review of the literature.  Antigenic relationship in combined immunization; review of the literature.  Zhur. mikrobiol. epid.i immun. 29 no.12:5-10 D 58. (MIRA 12:1)  Zhur. mikrobiol. epid.i immun. 29 no.12:5-10 D 58. (MIRA 12:1)  Liz Institute epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.  (WACCINES AND VAGGINATION. Immun. review (Rus)) |                  |                                   |                                      |                             |         |      |           |          |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------|--------------------------------------|-----------------------------|---------|------|-----------|----------|--------|
| 1. Iz                                                                                                                                                                                                                                                                                                                                                                                                        | Institu<br>(VACC | ta epidem<br>INES AND<br>antigen: | iologii i<br>VACCINATI<br>lo relatio | mikrobio<br>ON,<br>nahip in | complex | immi | n., revie | w (Rus)) |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         | •    |           |          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         |      |           |          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         |      |           |          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         |      |           |          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  | :                                 |                                      |                             |         |      |           |          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         |      |           |          | :<br>: |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                   |                                      |                             |         | 4.5  |           |          |        |

VOSKRESENSKIY, B.V.; MIRONOV, N.P.; SHEVCHENKO, V.F., mekhanik Production of high-quality engineering lime. Stroi. mat. 5 ne.4:22-24 1.Glavnyy inzhener Chelyabinskege zaveda ferresplavev (fer Voskresenskiy).
2.Nachal'nik tsekha Chelyabinskege zaveda ferresplavev (fer Mirenev). Ap 159. (Chelyabinsk--Idme)

18.1150,18.3200

sov/133-60-1-16/30

Voskresenskiy, B. V., Ryss, M. A.

AUTHORS:

Ferroalloys. Production of Chystalline Silicon in a

Furnace With a Rotary Bath TITLE:

PERIODICAL:

Stal', 1960, Nr 1, pp 51-53 (USSR)

ABSTRACT:

This is a brief report regarding the Soviet experience in application of rotary bath to the furnaces producing labor-consuming silicon alloys. The authors refer to the III International Congress on Electrochemistry in 1953 in Paris and the report by Khammerlund mentioning the fact that during 1946-1953 there were eight open rotary furnaces built in Europe for production of formalloys. In the USSR the first furnace with rotary bath was put into service in April 1958. It was used that was put into service in April 1958. for production of 45 and 75% ferrosilicon and did not show any noticeable improvement over the work of the stationary furnace. In connection with the planning of large shops for production of ferrosilicon in the closed rotary furnaces, one of the existing furnaces was equipped

card 1/4

Production of Crystalline Silicon with a rot ry mechanism, in order to determine the in a Furnace With a Rota: Bath Ferroalloys. effect of the rotary bath and to develop the technology of production of silicon alloys in the rotary furnaces. The furnace had following specifications: shell diameter 3,500 mm; bath diameter 2,200 mm; height of shell 2,500 mm; height of shell 2,500 mm; 1,400 mm; diameter of electrodes 400 mm. A three-phase transformer of the furnace had five voltage stages: I, II, voltage was 10,000 v. The secondary voltage was 100, 110, 120, 130 v, respectively. The current in the secondary winding was (amperes) 17,300, rent in the secondary was (amperes) 16,800, 16,800, 15,800, and 14,700, respectively. The working stage was the fourth stage, with 120 v. The working stage was the fourth stage, with 120 v.

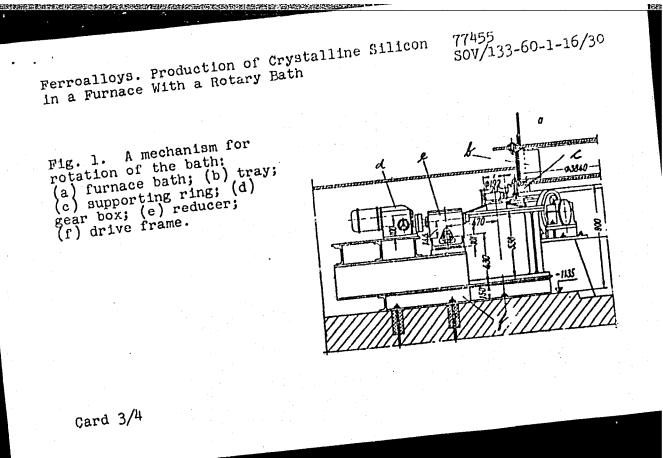
The mechanism for rotation of the bath is shown in

Fig. 1. The optimum speed of rotation was 11 hours per turn. The furnace was operated for 3 months, producing crystalline silicon. During this time the capacity of the furnace increased by 3.7%; power capacity of the farmace increased by 3.1%; power consumption decreased by 2.8%; electrode consumption decreased by 1.3%; and charcoal consumption decreased by 1.3%; and charcoal consumption decreased

Card 2/4

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020019-3"

620



 Ferroalloys. Production of Crystalline Silicon in a Furnace With a Rotary Bath

77455 sov/133-60-1-16/30

by 26.6%. The authors arrived at the rollowing conclusions. (1) The application of rotary bath for production of crystalline silicon in the furnaces of 3,500 kw·a capacity is advisable (a 115.58 rubles/ton economy was realized). (2) It is recommended that the economy equipment be installed in the furnaces protary equipment be installed in the furnaces producing such labor-consuming and technologically complex alloys as 90% ferrosilicon, chromium silicon, plex alloys as 90% ferrosilicon, and that the development of technology of producing ferroalloys in the ment of technology of producing ferroalloys in the rotary furnaces be continued. (3) For elimination of rotary furnaces be continued. (3) For elimination of rotary furnaces be continued. (1) For elimination of rotary furnaces be continued. (2) For elimination of rotary furnaces be continued. (3) For elimination of rotary furnaces are complished a rotation in the 1200 sector. There are accomplish a rotation in the 1200 sector.

card 4/4

s/117/60/000/011/035/035 A004/A001

AUTHOR:

Voskressnskiy, B. V.

The Offices of Economic Plant Analysis

TITLE:

PERIODICAL:

Mashinostroitel', 1960, No. 11, pp. 41-42 The author gives a report on the offices of economic plant analysis

which were established by the initiative of members of the Nauchno-tekhnicheskoye obshchestvo mashinostroitel noy promyshlemosti (Scientific and Technical Society of the Mechanical Engineering Industry) at the enterprises of the Sverdlovsk oblast, amorg others the Sverdlovsk turnomotornyy zavod (Sverdlovsk Turbine Engine Plant), Uralmashzavod, Sverdlovskiy mashinostroital nyy zavod (Sverdlovsk Mechanical Engineering Plant), Uralkhimmashzavod, Uralvagonzavod, the Plant im. Mechanical Engineering Flant, orackitaminasitzavou, oracvagonizavou, oracvagonizavou, orackitaminasitzavou, or vorovskiy and the training and reactive, particularly on the economic sector. At some plants special teams are created to analyze the causes of definite deficiensome plants special temms are disasted of analysis and causes of desired and cies, e. g. non-fulfilment of the production plan, labor-productivity plan, increased cost of manufacture, excess consumption of materials, etc. The author presents some examples: The tool shop of the Sverdlovsk Turbine Engine Plant at

Card 1/2

s/117/60/000/011/035/035 A004/A001

The Offices of Economic Plant Analysis

the beginning of the year did not come up to the target of labor productivity. The shop office of economic analysis under the management of economist Vilikhovskaya tackled this problem and found that some special machine tools operating in two shifts were not fully employed which reflected on the worker's productivity. The office of economic analysis recommended to transfer the machines concerned to one-shift operation, thus the workers of the first shift started to fulfil their production plans, while the workers of the second shift were transferred to other jobs. Moreover, the office of economic plant analysis at the mentioned plant found out that particularly young workers with insufficient vocational training did not fulfil their quotas. Therefore, on the suggestion of the office, an experienced highly skilled worker was attached to each of the less qualified young workers and the production plan was fulfilled. The author calls this a characteristic example of the work of the Offices of Economic Plant Analysis and cites further examples of their activities. He concludes that, although the Offices of Economic Plant Analysis have been in existence only for some months, their work has already proved to be rather successful so that also in other plants Offices of Economic Plant Analysis are being established.

Card 2/2

# VOSKRESENSKIY, BV

PHASE I BOOK EXPLOITATION

sov/1314

Moskovskiy dom nauchno-teknnicheskoy propagandy imeni F.E.

Opredeleniye proizvodstvennykh moshchnostey v mashinostroyenii (Determining Productive Capacities in Machinery Manufacturing) Moscow, Mashgiz, 1957. 185 p. 8,000 copies printed.

Additional Sponsoring Agency: Obshchestvo po rasprostraneniya politi-

cheskikh i nauchnykh znaniy RSFSR. Ed.: Voskresenskiy, B.V.; Tech. Ed.: Uvarova, A.F.; Managing Ed. for Literature on the Economics and Organization of Production

PURPOSE: This collection of articles is for engineering and technical personnel of manufacturing plants and national economic councils.

card 1/4